UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,032	10/07/2003	James C. Weatherall	1640-006	2689

33461 7590 12/15/2004

SULLIVAN LAW GROUP
1850 NORTH CENTRAL AVENUE
SUITE 1140
PHOENIX, AZ 85004

EXAMINER	
SHRIVASTAV, BRIJ B	
ART UNIT	**PAPER NUMBER**
2859	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/681,032	WEATHERALL ET AL.	
	Examiner	Art Unit	
	Brij B Shrivastav	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,13,15-18,23-27,29,30 and 32-35* is/are rejected.

7)☒ Claim(s) *3,10-12,14,19-22,28,31,36 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4-9, 13, 15-18, 23-27, 29, 30, 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Cosman (US 6,774,634).

As regards to claim 1, Cosman teaches a method for obtaining spatial information about an object, the method including steps of interacting electromagnetic radiation at a plurality of frequencies with the object to obtain a corresponding plurality of measured resonant transverse magnetic modes (figures 1 and 4; column 2 and 3, lines 62-67 and 1-61, column 7, lines 39-61); and using the plurality of measured resonant transverse magnetic modes to obtain the spatial information for the object (figure 4, columns 9 and 10, lines 48-67 and 1-10).

As regards to claims 5 and 16, Cosman teaches an apparatus and method for obtaining spatial information relating to an object (figures 1 and 4), the apparatus including a cavity having a size and a shape sufficient to physically accommodate the object (figure 1, numeral 22) an antenna system for directing electromagnetic radiation comprising a plurality of frequencies into the cavity, and for receiving a corresponding

plurality of measured resonant transverse magnetic modes (figure 1, numeral 30); and a signal processor operatively coupled to the antenna system for processing the measured resonant transverse magnetic modes to obtain the spatial information relating to the object (figure 1 numeral 18).

As regards to claim 7, Cosman teaches a method for measuring the dielectric constant of an object, the method including steps of interacting electromagnetic radiation at a plurality of frequencies with the object to obtain a corresponding plurality of measured resonant transverse magnetic modes (figures 1 and 4; column 2, 3, lines 62-67 and 1-61, column 7, lines 39-61); and using the plurality of measured resonant transverse magnetic modes to obtain the dielectric constant for the object (figure 4, columns 9 and 10, lines 48-67 and 1-10, column 2, lines 53-58).

As regards to claim 9, Cosman teaches a method for measuring the dielectric constant of an object, the method including steps of interacting electromagnetic radiation at a plurality of frequencies with the object to obtain a corresponding plurality of measured resonant transverse magnetic modes, and the measured resonant transverse magnetic modes comprising dielectric constant information and spatial information relating to the object, and using the plurality of measured resonant transverse magnetic modes to obtain the spatial information (figures 1 and 4, column 2 and 3, lines 62-67 and 1-61, column 7, lines 39-61), and further using the plurality of measured resonant transverse magnetic modes and the spatial information to obtain the dielectric constant information and the dielectric constant for the object (figure 4, column 2, lines 53-57).

As regards to claims 15 and 17, Cosman teaches an apparatus and method for measuring the dielectric constant of an object, the apparatus including a cavity having a size and a shape sufficient to physically accommodate the object (figures 1 and 4, numeral 22) an antenna system for directing electromagnetic radiation comprising a plurality of frequencies into the cavity, and for receiving a corresponding plurality of measured resonant transverse magnetic modes (figure 1, numeral 30); and a signal processor operatively coupled to the antenna system for processing the measured resonant transverse magnetic modes to obtain the dielectric constant for the object (figure 1, numeral 16, column 2, lines 53-57).

Claims 2, 4, 6, 8, 13, 18, 23-27, 29, 30 and 32-35 are further rejected as Cosman teaches, a cylindrically shaped cavity and an antenna system, having radiating and or receiving elements, and symmetrically situated in it to transmit and receive electromagnetic radiation to obtain resonant transverse magnetic mode, corresponding to a plurality of frequencies to obtain spatial information and to measure dielectric constant of the sample in question (figures 1, 3 and 4).

3. Claims 3, 10-12, 14, 19-22, 28, 31, 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Other very relevant art is as follows; which may be used to reject most of the claims under 102(e) or in combination with under 103(a).

US 6,828,558; US 6,522,910; US 3,437,914

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 10, 2004

Brij B Shrivastav
Primary Examiner
Art Unit 2859

***